

# इंटरनेट

# मानक

## Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 6353 (1991): End Mills with Parallel Shank [PGD 32: Cutting tools]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



BLANK PAGE



IS 6353 : 1991  
(Reaffirmed 2001)  
Edition 2.2  
(2002-03)

भारतीय मानक  
समानान्तर शैंक वाले एन्ड मिल की विशिष्टि  
(पहला पुनरीक्षण)

*Indian Standard*

END MILLS WITH PARALLEL SHANK —  
SPECIFICATION

*( First Revision )*

(Incorporating Amendment Nos. 1 & 2)

UDC 621.914 22

© BIS 2002

**BUREAU OF INDIAN STANDARDS**  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

Price Group 2

## FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Milling Cutters, Saws, Gear Cutting Tools and Broaches Sectional Committee, had been approved by the Production Engineering Division Council.

This standard was first published in 1971. This revision has been taken up to bring this standard in line with International Standard.

Following changes have been made in this revision:

- a) End mill with ball nose end has been included,
- b) Series up to 71 mm have been incorporated, and
- c) Sampling clause has been incorporated.

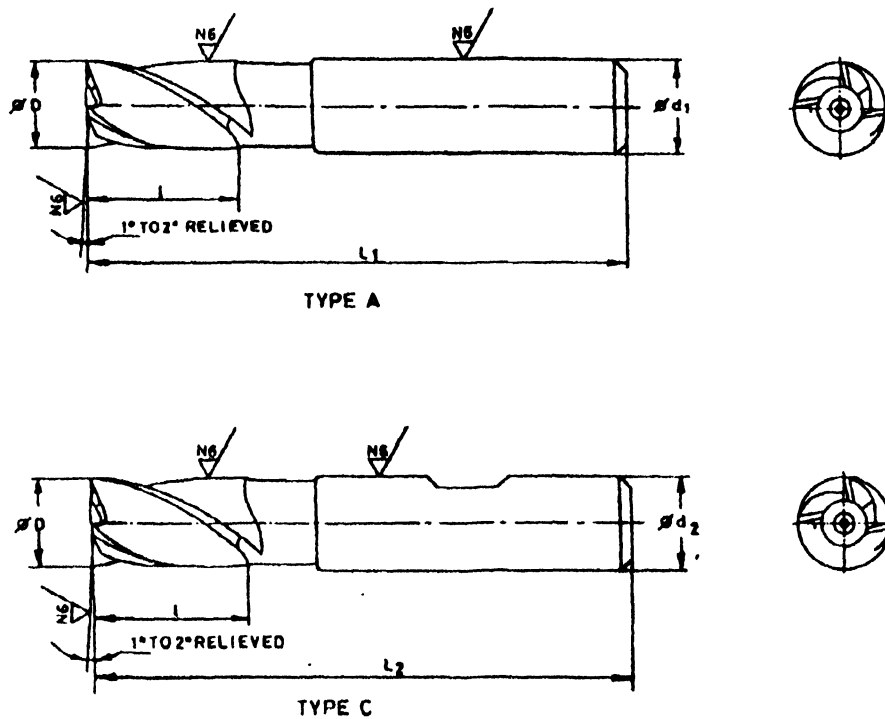
In the preparation of this standard, considerable assistance has been derived from ISO 1641/1-1978 'End mills and slot drills: Part 1 Milling cutters with parallel shank', issued by the International Organization for Standardization (ISO) and DIN 844 (Part 1) : 1978 'End mills with parallel shanks. Dimensions' issued by Duestches Institut für Normung (DIN).

This edition 2.2 incorporates Amendment No. 1 (September 1993) and Amendment No. 2 (March 2002). Side bar indicates modification of the text as the result of incorporation of the amendments.

**AMENENDMENT NO. 2 MARCH 2002  
TO  
IS 6353 : 1991 END MILLS WITH PARALLEL  
SHANK — SPECIFICATION**

( *First Revision* )

( *Page 2, Fig. 1 'Dimension for End Mills with Parallel Shank', Type A and Type C* ) -- Substitute the following for the existing figures:



( BP 11 )

Reprography Unit, BIS, New Delhi, India

# Indian Standard

## END MILLS WITH PARALLEL SHANK — SPECIFICATION

### ( First Revision )

#### 1 SCOPE

This Indian Standard (First Revision) covers the dimensions and other requirements for flat end and ball nosed end mills with parallel shanks.

#### 2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard.

IS No.	Title
1830 : 1982	Technical supply conditions for milling cutters ( <i>second revision</i> )
7778 : 1975	Methods for sampling small tools
8692 : 1978	Dimensions for parallel shanks for milling cutters

#### 3 TYPES

End mills shall be of following types :

*Type A* — End mill with flat end, plain parallel shank

*Type B* — End mill with ball nosed end, plain parallel shank

*Type C* — End mill with flat end, flatted parallel shank

*Type D* — End mill with ball nosed end, flatted parallel shank

#### 4 TERMINOLOGY

For the purpose of this standard definition given in IS 1830 : 1982 shall apply

#### 5 DIMENSIONS

The dimensions shall be as given in Table 1 read with Fig. 1.

#### 6 TOLERANCE ON $l$ , $L_1$ AND $L_2$

All dimensions in millimetres.

Range of Length		Tolerance on $l$ , $L_1$ and $L_2$
Above	Up to & Including	
—	6	$\pm 0.5$
6	30	$\pm 1.0$
30	80	$\pm 1.5$
80	180	$\pm 2.0$
180	—	$\pm 2.5$

#### 7 MATERIAL AND HARDNESS

Material and hardness of end mills shall be according to IS 1830 : 1982

#### 8 GENERAL REQUIREMENTS

8.1 Unless otherwise specified, Type A end mills of standard series with right hand helical flutes for right hand cutting shall be supplied.

8.1.1 Unless otherwise specified, Type A and C end mills shall be supplied without, centre cutting design and Type B and D end mills with centre cutting design.

8.2 For the requirements not covered in this standard reference shall be made to IS 1830 : 1982.

8.3 Dimensions for plain and flatted parallel shanks shall be according to IS 8692 : 1978

#### 9 SAMPLING

The sampling and criteria of acceptance shall be according to IS 7778 : 1975.

#### 10 DESIGNATION

An end mill with plain parallel shank of Type A having diameter (  $D$  ) 10 mm of standard series made from high speed steel, and of tool type N shall be designated as:

End Mill Parallel Shank IS 6353 A 10 N Standard.

#### 11 MARKING

Each end mill shall be marked according to IS 1830 : 1982.

#### 12 PRESERVATIVE COATING AND PACKAGING

Preservative coating and packaging of end mills shall be as given in IS 1830 : 1982.

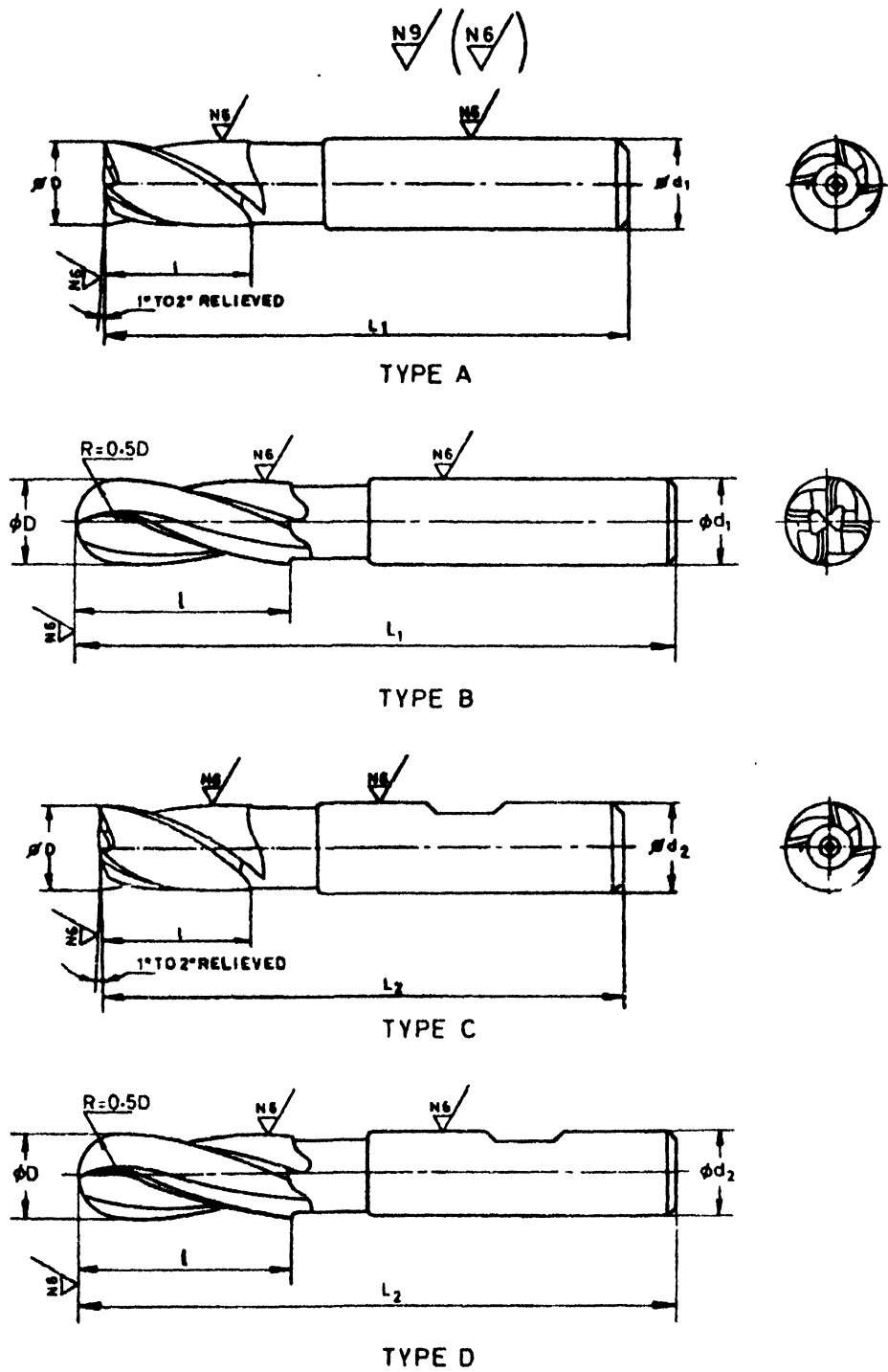


FIG. 1 DIMENSION FOR END MILLS WITH PARALLEL SHANK



**Table 1 Dimensions for Flat End and Ball Nosed End Mills with Parallel Shank**

( Clause 5 and Fig 1 )

All dimensions in millimetres

Recommended Diameter <i>D</i> js 14	Range of Diameter		Shank Diameter		Lengths						Tool Type
	Over	Up to and Including	<i>d</i> <sub>1</sub> h8	<i>d</i> <sub>2</sub> h6	Standard Series			Long Series			
					<i>l</i>	<i>L</i> <sub>1</sub>	<i>L</i> <sub>2</sub>	<i>l</i>	<i>L</i> <sub>1</sub>	<i>L</i> <sub>2</sub>	
2	1 9	2 36	4	6	7	39	51	10	42	54	N,H,S
2 5	2 36	3			8	40	52	12	44	56	
3					10	42	54	15	47	59	
3 5	3	3 75			11	43	55	19	51	63	
4	3 75	4				45			53		
4 5	4	4 75	13	47		57	24	58	68		
5	4 75	5		57		68					
6	5	6	6		16	60	66	30	74	80	
(7)	6	7 5	8	10	19	63	69	38	82	68	
8	7 5	8				69			88		
(9)	8	9 5	10		22	72		45	95		
10	9 5	10				79			102		
(11)	10	11 8	12		26	83		53	110		
12	11 8	15				92			123		
(14)		15	16	32	104		75	141			
16	19	23 6	20	38	121		90	166			
(18)		30			25	133		186			
20	23 6	30	25	45	155		125	217			
(22)					32	177		252			
25	37 5	47 5	40	63	192		180	282			
(28)					60	202		292			
32	47 5	60	50	75	202		180	292			
(36)					67	292					
40	60	67	63	90	202		180	292			
(45)					75	292					
50	67	75	63	90	202		180	292			
(56)					75	292					
63	60	67	63	90	202		180	292			
71	67	75			202			292			

NOTE -  $d_1$  = Standard dia for plain parallel shank $d_2$  = Standard dia for flatted parallel shank

Non preferred sizes are given with in parenthesis

## Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 1986* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

### Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designation. Enquiries relating to copyright be addressed to the Director (Publication), BIS.

### Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Handbook' and 'Standards Monthly Additions'.

This Indian Standard has been developed from Doc: No. CED 23 ( 4993 )

### Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

## BUREAU OF INDIAN STANDARDS

### Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002  
Telephones: 323 01 31, 323 33 75, 323 94 02

Telegrams: Manaksansth  
(Common to all offices)

### Regional Offices:

### Telephone

Central	: Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	323 76 17, 323 38 4
Eastern	: 1/14 C.I.T. Scheme VII M, V.I.P. Road, Maniktola CALCUTTA 700054	{ 337 84 99, 337 85 6 337 86 26, 337 91 2
Northern	: SCO 335-336, Sector 34-A, CHANDIGARH 160022	{ 60 38 4 60 20 2
Southern	: C.I.T. Campus, IV Cross Road, CHENNAI 600113	{ 235 02 16, 235 04 4 235 15 19, 235 23 1
Western	: Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093	{ 832 92 95, 832 78 5 832 78 91, 832 78 6
Branches	: AHMADABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. LUCKNOW. NAGPUR. PATNA. PUNE. THIRUVANANTHAPURAM.	